Green Power Switch® News

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Inside . . .

Green Power Switch News *is produced cooperatively by the Tennessee Valley Authority, distributors of TVA power, and the environmental community to provide information about the status and growth of Green Power Switch—a renewable energy option.*

Green Power Switch News *is available electronically, or in print form to Green Power Switch subscribers upon request. For more information, visit the Green Power Switch Web site at www.greenpowerswitch.com, or contact your local public power company.*

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Green Power Switch®

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Green Power Switch keeps growing

Green Power Switch is thrilled to welcome seven new East Tennessee distributors: Bristol Tennessee Electric System, Johnson City Power Board, Lenoir City Utilities Board, Erwin Utilities, Morristown Power Systems, Mountain Electric Cooperative, and Appalachian Electric Cooperative. These distributors now offer their customers a choice in purchasing electricity from renewable resources.

On October 30, 2001, Green Power Switch held the first new-distributor training session since the program launch in April 2000. Each of the seven distributors sent a designated Green Power Switch coordinator to the half-day training held in Johnson City, Tennessee. The training session provided new participants with an overview of the Green Power Switch program, tools to implement a billing system for green power sales, techniques to market the program to their customers, and an overall implementation strategy.

Green Power Switch Facilitator Carmen Ledbetter (holding balloons) gets a little carried away at a Halloween eve training session.

Spreading the message about environmental stewardship

The Reverend Sally Bingham, of Grace Cathedral in San Francisco, made a visit to Knoxville on November 7 to meet with public and religious leaders and discuss the role of churches in environmental stewardship. She also met with TVA staff to discuss Green Power Switch.

Two years ago, Rev. Bingham and her diocesan commission for the environment received approval to form Episcopal Power and Light (EP&L) in order to allow churches to purchase green power. Within a year, nearly 60 parishes in California had switched to green power, and the program quickly became national and interdenominational. Steve MacAusland of the Massachusetts Diocese is the co-director of EP&L with Rev. Bingham.

EP&L arranged for the 2000 Episcopal General Convention in Denver to become the first convention in the United States to be completely powered by wind energy. The impact of this was so great that the 2000 Democratic National Convention followed the church's example and was also powered by renewable energy.

Students are energized about solar power

By Emily Sullivan, Gibson Electric Membership Corporation

Students at Gibson County High School in Dyer, Tennessee, have become resident experts on solar energy. A solar array built at the school last fall became the catalyst for a curriculum that now includes the study of alternative energy sources and the operation and performance of photovoltaic (PV) modules.

TVA partnered with Gibson Electric Membership Corporation and Gibson County Special School District on the project, giving GCHS the distinction of being the first school in the Tennessee Valley to host a Green Power Switch solar-powered generating facility.

The 18-kilowatt photovoltaic system is mounted on two 16- by 135-foot canopies that provide cover for a walkway between the school's vocational-technical center and its gymnasium. The 480 semiconductor cells (modules) that comprise the PV system convert sunlight directly into electricity. When operating at full potential, the PV system can produce about 18 kilowatts of electricity—about as much as is needed to power two average homes in the Tennessee Valley.

Students in Dr. Jane Pinkerton's physics class access real-time data sent from the solar array to a computer in their classroom. They analyze solar radiation, wind speed, temperature, and rainfall data; track the amount of electricity produced at the site; and calculate the amount of emissions into the air that will be reduced by using solar power.

"This is a tremendous opportunity for them to be more aware of alternative energy sources and to learn firsthand about alternative forms of energy," Dr. Pinkerton says.

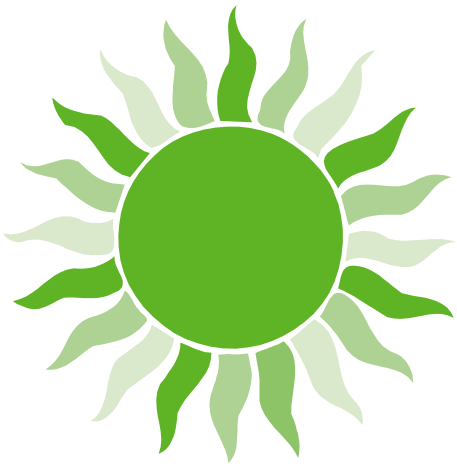
Students in David Summers' agriculture class have also benefited from the solar project. It offered them an opportunity to hone their horticultural skills by setting out shrubbery, laying sod, arranging landscape stones, and providing for adequate drainage around the site. Once the plants were established, the students made observations concerning the shading effect caused by the position and angle of the canopies.

Perhaps most impressive of all, interest in solar power at the school prompted a curriculum integration project between Dr. Pinkerton's principles of technology class, Ronnie Hall's auto mechanics class, and Mike Sims' drafting and metals class. The classes pooled their resources to design, build, and race a solar-powered car. They entered their first competition in May—the Solar Bike Rayce USA 2001 in Topeka, Kansas.

"Preparing for this competition was a very good hands-on learning project," Dr. Pinkerton says. Students researched the technical requirements; did cost, efficiency, and energy-output comparisons of various solar panels; and purchased materials. They then labored for hours welding the aluminum frame, installing a 120-watt solar panel and two 12-volt batteries, and applying a covering of airplane fabric.

Even though they didn't take home the gold, the students and faculty were undaunted. They plan to build a new, improved model and return for next year's race.

For more information about solar power and Gibson County High School's solar photovoltaic array, visit **www.greenpowerswitch/solar.htm**.



Chattanooga forms new energy stewardship group

Representatives from several faith-based organizations in the Chattanooga area met this fall to learn about Green Power Switch and determine ways to model and encourage a more Earth-friendly use of energy. The program included a video exploring the connections between energy use, global warming, environmental degradation, caring, and justice.

Following the video, participants discussed existing energy stewardship programs and determined potential paths for the group in support of better and broader stewardship. Representatives from two churches also announced their participation in Green Power Switch.

A winter meeting is also planned. For more information, send an e-mail to Sandy Kurtz (sandy65613@aol.com), or call 423-892-5237 in Chattanooga.

Blown away with proposals

TVA is continuing with plans to expand its wind power generation by adding approximately 20 megawatts of wind energy to Green Power Switch by October 2003. Eight wind developers have presented more than 20 proposals ranging from 20 to 60 megawatts on five potential sites. The proposals include a turnkey engineering and construction project to be owned by TVA, as well as purchases of wind energy from independent power producers. TVA is evaluating the bids and plans to select a developer by early 2002.

The sites being considered are near Mountain City and Oliver Springs, Tennessee. TVA held a public meeting on December 3 in Mountain City to provide information and gather comments and concerns from local residents. Over 150 people attended the meeting, many expressing their support. TVA's environmental staff has initiated the environmental review process on the sites, and TVA plans to host more public meetings during January.

Generation update

Solar power sites	Generation October 1 - December 31
Cumberland Science Museum	6,513 kWh
Dollywood Tram C	2,030 kWh
Dollywood Tram D/E	2,671 kWh
Gibson County High School	5,032 kWh
Ijams Nature Center	3,954 kWh
Cocke County High School	2,764 kWh
Duffield-Pattonsville Elementary School	2,782 kWh
Sci-Quest/North Alabama Science Center	5,504 kWh
American Museum of Science & Energy	4,286 kWh
Lovers Lane Soccer Complex	9,633 kWh
Finley Stadium	21,070 kWh
Total solar generation	**68,745 kWh**

Wind power site	Generation October 1 - December 31
Buffalo Mountain Wind Park	**1,329,600 kWh**

Methane gas	Generation October 1 - December 31
Middle Point Landfill Gas Generation Facility	**3,275,700 kWh**

Participation update

Total number of green power blocks subscribed:	**13,611**
Number of green power blocks subscribed since October 1, 2001:	**632**
Number of residential customers subscribing:	**4,708**
Average number of green power blocks per residential customer:	**1.7**
Number of business customers subscribing:	**214 business customers purchasing 5,655 blocks**

Middle Point Landfill and Allen Methane Project updates

Middle Point Landfill

- Contracts signed in October 2001 with Allied Waste Management to purchase methane
- Contract signed in December 2001 to purchase plant from Energy Development Incorporated (EDI)
- Plant operating at 70 percent capacity due to limited fuel supply
- Site producing 2.6 megawatts of generating capacity
- Planned operations and maintenance activities should increase fuel supply, thereby increasing site production

Allen Methane Project

- Project is complete
- Unit 3 started in January 2002
- Initial generating capacity estimated to be four megawatts

Comments? Suggestions? *Let us hear from you!*

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